

1 1. (Amended) An alloy which comprises:

C1 2 Si : 6.5 - 7.5 wt%

3 Fe: up to 0.20 wt%

4 Cu : up to 0.05 wt%

5 Mn : up to 0.05 wt%

6 Mg : 0.40 to 0.45 wt%

7 Zn : up to 0.05 wt%

8 Ti : up to 0.20 wt%

9 and the balance Al and other components, wherein said other

10 components comprise a total of not more than 0.15 wt% of said alloy and any

11 single component of said other components does not exceed 0.05 wt% of said

12 alloy, the alloy having a microstructure which includes a primary aluminum-

13 containing matrix and one or more iron-containing phases dispersed in the

14 matrix, wherein the sole or predominant iron-containing phase is β phase that

15 has formed as a transformation product of phase and wherein the matrix has

16 a dendrite arm spacing of between 10 and 45 μm .

1 5. (Amended) A method for manufacturing an alloy article comprising

C2 2 the steps of:

3 (a) providing a melt having a composition of:

4 Si : 6.5 - 7.5 wt%

5 Fe: up to 0.20 wt%

6 Cu : up to 0.05 wt%

7 Mn: up to 0.05 wt%

8 Mg : 0.40 to 0.45 wt%

9 Zn: up to 0.05 wt%

10 Ti : up to 0.20 wt%

11 and the balance Al and other components, said other components
12 comprising a total of not more than 0.15 wt% of said alloy and any single
13 component of said other components not exceeding 0.05 wt% of said alloy,

14 (b) casting said melt and solidifying a casting at a cooling rate that
15 produces a microstructure of an aluminum-containing matrix and π and β iron-
16 containing phases dispersed in the matrix, wherein the cooling rate on
17 solidification is sufficient to produce a dendrite arm spacing in the matrix of
18 between 10 and 45 μm ;

19 (c) solution heat treating the casting to at least partially transform π
20 phase to β phase; and

21 (d) quenching the casting to form the alloy article.

C2

